

Managing Complexity the management of interactions



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In the light of Solvency II it's clear that we have to improve our understanding of risk. The rate of bankruptcies is increasing and there is evidence that we do not manage enterprises effectively. There is a long-held view, cherished by analysts, of enterprises as mechanisms. Analytical techniques have increasing ingenuity, but are regularly and systematically exposed by failures. In fact modern enterprises are organic, social systems and not all behaviour is rational, or linear, or statistically inclined. Only by understanding the whole can we begin to work with the parts and in this synthesis find clarity

Synthesis is a top-down process, the complete opposite of the analytical process and works from the whole to the parts. In this way complexity need not be a problem and becomes so only for the analyst who tries to take the system apart and to treat and deal with each of the parts, and their interactions, independently. How though in real systems can this putting the parts together as a whole be practically achieved? We start with all the data characterising the functioning of an enterprise then build non-parametric models to understand how the parts interact. This investigation of the whole and looking at how the parts work together becomes the management of interactions.

The worst mistakes in organisations are not the things that have been done incorrectly but the things that should have been done. Errors of omission, as they are called, are far more serious than errors of commission - things done wrongly. Errors of omission tend to be more serious and are largely responsible for business failures and bankruptcy. By looking at the parts individually, and by using analysis alone, we court failure.

Managers and decision makers need the tools and processes to support intuition and good judgment. Most managerial training is in the analyses of processes and avoids ideas of holism. In this management of processes we see information as more valuable than data, knowledge more valuable than information, understanding more valuable than knowledge, but we devote most of our time to data and knowledge, less to understanding and hardly any to wisdom which comes from understanding. Knowledge resides in the strategic layer and wisdom in the strategist. We must place in the hands of these practitioners the appropriate tools so that they might learn their craft.

"The connectedness of everything" as Dawkins envisaged evolution has failed to be practically understood and managed outside of biological systems. However, this "connectedness" or driver of complexity as we might also think of it is a fundamental property of every dynamical system. Unmanaged complexity is the main enemy of systems. Critically complex systems become almost impossible to manage, hence are vulnerable and greatly exposed to both internal and external sources of uncertainty. A system complexity metric enables a simple but effective holistic representation of system behaviour that then enables standard Data Mining techniques for System Health Monitoring. We can create a "Health Index" of systems, business units, teams, or at whatever level is most significant

DRTS has painstakingly developed the innovative tools that enable the "craft" of managing complexity, and of managing risk. DACORD™ is used by financial service companies in a new approach to enterprise risk management.



